

LEBLER

Application No. 10/048,122

Response to office action dated June 26, 2003

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Currently Amended): A method of writing information in a data storage medium ~~(D)~~ comprising an optical information medium which has a polymer carrier ~~(+)~~, the method comprising introducing wherein atoms and/or molecules that change the refractive index ~~are introduced~~ into the polymer carrier ~~(+)~~, at locations ~~(4)~~ associated with individual information units, as a function of the information to be entered.

Claim 2 (Currently Amended): The method as claimed in claim 1, wherein the atoms and/or molecules that change the refractive index are diffused into the polymer carrier ~~(+)~~, preferably by means of local heating.

Claim 3 (Currently Amended): The method as claimed in claim 2, wherein the atoms and/or molecules that change the refractive index originate from a layer ~~(2)~~ which is formed on ~~applied to~~ the polymer carrier ~~(+)~~.

Claim 4 (Currently Amended): The method as claimed in claim 3, further comprising removing the remaining portions wherein the rest of the layer ~~(2)~~ is removed from the polymer carrier ~~(+)~~ after the information has been entered.

Claim 5 (Original): The method as claimed in claim 1, wherein the atoms and/or molecules that change the refractive index are implanted into the polymer carrier by means of particle beams.

Claim 6 (Previously Presented): The method as claimed in claim 2, wherein the information to be entered is entered by means of irradiation with infrared light.

Claim 7 (Currently Amended): The method as claimed in claim 1, wherein the information to be entered is entered by means of a focused write beam (3).

Claim 8 (Previously Presented): The method as claimed in claim 1, wherein the information to be entered is entered over a large area, using a mask.

Claim 9 (Currently Amended): The method as claimed in claim 1, wherein highly polarizable molecules are used as the atoms and/or molecules that change the refractive index.

Claim 10 (Currently Amended): The method as claimed in claim 9, wherein halogen-containing molecules are used as the highly polarized molecules.

Claim 11 (Currently Amended): The method as claimed in claim 9, wherein aromatic molecules are used as the highly polarizable molecules.

Claim 12 (Currently Amended): The method as claimed in claim 1, wherein slightly polarizable molecules are used as the atoms and/or molecules that change the refractive index.

Claim 13 (Currently Amended): A data storage medium, comprising an optical information medium with entered information, which has a polymer carrier (1), the polymer carrier (1) containing atoms and/or molecules that change the refractive index, at locations (4) associated with individual information units, as a function of the entered information.

Claim 14 (Currently Amended): A data storage medium, comprising an optical information medium, which has a polymer carrier (1), the polymer carrier (1) being provided with a layer (2) which contains atoms and/or molecules that change the refractive index and which can be diffused into the polymer carrier (1) by means of local heating.

Claim 15 (Previously Presented): The data storage medium as claimed in claim 13, wherein the atoms and/or molecules that change the refractive index comprise highly polarizable molecules.

Claim 16 (Original): The data storage medium as claimed in claim 15, wherein the highly polarized molecules comprise halogen-containing molecules.

Claim 17 (Previously Presented): The data storage medium as claimed in claim 15, wherein the highly polarizable molecules comprise aromatic molecules.

Claim 18 (Previously Presented): The data storage medium as claimed in claim 13, wherein the atoms and/or molecules that change the refractive index comprise slightly polarizable molecules.

Claim 19 (Currently Amended): The data storage medium as claimed in claim 14 in connection with claim 14, wherein the layer (2) is assigned an absorber which is set up to absorb a write beam, at least partially, and to locally discharge the heat produced thereby at least partially to the layer (2) and/or the polymer carrier (1).

Claim 20 (Currently Amended): The data storage medium as claimed in claim 13, wherein the information medium has a plurality of polymer carrier plies (10), through which information units can be read from a preselected polymer carrier ply (10) and, if appropriate, can be written to a preselected polymer carrier ply (10).

Claim 21 (Currently Amended): The data storage medium as claimed in claim 20, wherein an adhesion layer (12) is in each case arranged between adjacent polymer carrier plies (10).

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Claim 22 (Currently Amended): The data storage medium as claimed in claim 21, wherein the refractive index of the adhesion layer (~~12~~) differs only slightly from the refractive index of the polymer carrier (~~11~~).

Claim 23 (Currently Amended): The data storage medium as claimed in claim 13, wherein the polymer carrier comprises a polymer film (~~11~~).

Claim 24 (Currently Amended): The data storage medium as claimed in claim 23, wherein the information medium (~~11~~) is wound spirally.

Claim 25 (Original): The data storage medium as claimed in claim 24, which comprises an optically transparent winding core which has a recess in its central area.

Claim 26 (Currently Amended): The use of a data storage medium as claimed in claim 25 in a drive which is tuned thereto and has a reading device (S) and, optionally, a writing device (S), the reading device (S) and the optional writing device (S) being arranged in the recess in the central area of the winding core, and, in order to read or write information, being moved relative to the data storage medium (~~D~~) while the data storage medium (~~D~~) is stationary.

Claim 27 (New): A data storage method comprising:  
providing an optical information medium comprising a polymer carrier; and  
storing data by changing the optical properties of the polymer carrier, wherein the optical properties are changed by selectively introducing atoms and/or molecules into the polymer carrier.

Claim 28 (New): The method as claimed in claim 27, wherein the atoms and/or molecules are introduced into the polymer carrier from a layer formed on the polymer carrier.

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Claim 29 (New): The method as claimed in claim 28, wherein the layer formed on the polymer carrier is selectively heated to introduce the atoms and/or molecules into the polymer carrier by diffusion.

Claim 30 (New): The method as claimed in claim 28, further comprising:  
removing the layer formed on the polymer carrier after the storing of the data.